

**SIRIUS ENERGY STORAGE MODULE  
TECHNICAL DATA SHEET**

Part Number: 1860-48-B-1C-M-SD-A-X-X-G Version Date: April 2020



|                                     |   |   |
|-------------------------------------|---|---|
| <b>PERFORMANCE SPECIFICATIONS</b>   | Voltage (Nominal)                       | 48 V <sub>dc</sub>  |
|                                     | Maximum Charge Voltage                  | 54 V <sub>dc</sub>  |
|                                     | Discharge Cut-Off Voltage               | 44 V <sub>dc</sub>  |
|                                     | Total Energy                            | 1860 Wh   |
|                                     | Maximum Charge Rate                     | 40 A  |
|                                     | Maximum Discharge Rate                  | 40 A  |
| <b>ENVIRONMENTAL SPECIFICATIONS</b> | Cell Operating Temperature <sup>3</sup> | -30 °C to 80 °C   |
|                                     | Operating Humidity                      | Non-Condensing  |
| <b>MECHANICAL SPECIFICATIONS</b>    | Dimensions (w × d × h)                  | 419 mm x 474 mm x 200 mm  |
|                                     | Weight                                  | 41 kg   |
|                                     | Module Casing Material                  | GI  |
|                                     | Terminal Type                           | F08   |
| <b>SMART FEATURES</b>               | Monitoring Data                         | Temperature, Total Cell Voltage, Individual Cell Monitoring, Current and Energy                 |
|                                     | Remote control (optional)               | Via Sirius Remote Control   |
|                                     | Communication and Connectivity          | USB Port  |
|                                     | Alarm                                   | Audible alarm in the event of Over/under-Voltage, Over-Current, Over Temperature                |
| <b>SIRIUSVIEW SOFTWARE</b>          | Module Monitoring                       | Current, Voltage, Temperatures, Total Charge and Discharge Time, Total Energy delivered, Graphs |

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|   | System Monitoring  | Modules Monitoring (connected in parallel or series)  |
| <b>MODULE SERVICE LIFE</b>                | Projected Cycle Life <sup>4,5</sup>  | 1 million cycles  |
|   | Projected Calendar Life <sup>5,6</sup>                                     | 45 years  |
|   | Shelf Life <sup>7</sup>  | 10 years  |
|   | Warehousing  | Can be stored at any SOC without affecting cycle life   |
| <b>SAFETY PERFORMANCE</b>                 | Over/under voltage   | Hardware protection, Module shut down   |
|   | Over Current   | Hardware protection, Module shut down   |
|   | Over temperature   | Hardware protection, Module shut down   |
|   | Additional Safety  | 100 A DC Circuit Breaker+ 100 A Bypass Breaker + SSR protection   |
| <b>COMPLIANCE<sup>8</sup> INFORMATION</b> | EN55032:2015, EN55024:2010, EN61000-4-2:2009, EN61000 EN61000:2008+A2:2010 |   |
| <b>PRECAUTIONS</b>                        | Alarm  | In case of alarm, immediately rectify/attend to the cause of the alarm.   |
|   | Physical Damage  | In case the module is physically damaged due to any event, do not install and energize the module under any circumstances and contact your Reseller.  |
|   | Short Circuit  | Ensure precautions to prevent short-circuit under all circumstances.  |
|   | Galvanic isolation   | When connecting to external devices ensure that galvanic isolation does not exceed 1000V.   |
|   | Charge/Discharge Current   | Under no circumstances must the charge/discharge current exceed 40 A.   |
|   | Charging Voltage   | Under no circumstances must the charging voltage exceed 54 V <sub>dc</sub> for more than 60 seconds.  |
|   | Charge Cycle   | During charge cycle ensure never to exceed constant voltage of 54 V <sub>dc</sub> and constant current of 40 A.   |
|   | Series Connection  | <ul style="list-style-type: none"> <li>All Modules must be at 100% SOC before connecting in series.</li> <li>A maximum of 8 Modules with Module Combiner can be connected in series.</li> </ul> Please consult your Reseller when connecting the Modules in series. |

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|  | Parallel Connection        | There is no limit on the number of Modules that can be connected in parallel.      |
|  | Series-Parallel Connection | Modules cannot be connected in Series-Parallel combination under any circumstance. |
| <p><sup>1</sup>Self-discharge is the natural decay of the Module total voltage over time. Module self-discharge is 2% in Sleep Mode (switched off) and 9.6% in Switched-On Mode.</p> <p><sup>2</sup>The Module C-Rate refers to the rate at which a battery is charged or discharged. A 1C rate means that the current will charge or discharge the entire battery in 1 hour.</p> <p><sup>3</sup>The temperature range indicates the range in which the supercapacitor cells can operate. The performance of the cells may vary if they are continuously operated outside a temperature range of -10°C to 55°C, and/or at C-rates higher than the maximum charge/discharge rate specified in this spec sheet. The operating temperature range of the module varies based on the application. If the module is to be operated continuously outside a temperature range of -10°C to 55°C, and/or at C-rates higher than the maximum charge/discharge rate specified in the spec sheet, please consult Kilowatt Labs or its Reseller prior to deploying.</p> <p><sup>4</sup>Projected life of supercapacitor cells. Cycle life will vary if cycled more than 4 times a day.</p> <p><sup>5</sup>Additional terms and conditions, including a limited warranty, will apply at the time of purchase.</p> <p><sup>6</sup>Projected Calendar life of supercapacitor cells from the date of first operation.</p> <p><sup>7</sup>Shelf life is the life of the module (in years) from the date it is manufactured to the time it is first operated</p> <p><sup>8</sup>CE certification is completed for supercapacitor cells.</p> <p>Product dimensions are for reference only unless otherwise identified and may change without notice.<br/>For critical applications, please contact your Reseller.</p> |                            |  |

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